

CYSE 609 – FUND LINUX SYST FOR CYBER

Module 8 | Basic Linux Commands for Software Management

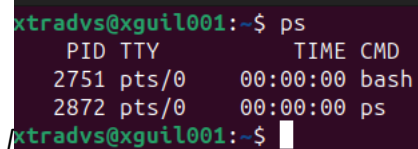
Total: 100 Points

Name: [Click or tap here to enter text.](#)

Directions: Complete the following tasks in Linux VM – Ubuntu using various Linux commands for Process and Software Management in Linux. Insert screenshots where applicable. Upload completed document in Canvas.

Task 1: Linux Commands for Basic Network Configuration

- Open a terminal and use the **ps** command to display information about the current processes. Upload the screenshot for this step after executing the command.



```
xtradvs@xguil001:~$ ps
  PID TTY          TIME CMD
 2751 pts/0    00:00:00 bash
 2872 pts/0    00:00:00 ps
xtradvs@xguil001:~$
```

Display all processes that are running by using the **top** command. (Keep this command running for the next few steps). Upload the screenshot for this step after executing the command.

```
top - 22:04:38 up 5 min,  2 users,  load average: 0.29, 0.66, 0.37
Tasks: 200 total,  1 running, 199 sleeping,  0 stopped,  0 zombie
%Cpu(s):  1.1 us,  0.8 sy,  0.0 ni, 97.9 id,  0.1 wa,  0.0 hi,  0.1 si,  0.0 st
MiB Mem : 7932.6 total,  6059.5 free,  1028.3 used,  1126.4 buff/cache
MiB Swap: 4096.0 total,  4096.0 free,  0.0 used.  6904.3 avail Mem
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
1908	xtradvs	20	0	4404928	363000	138920	S	13.3	4.5	0:25.57	gnome-s+
2168	xtradvs	20	0	153444	3328	2944	S	1.3	0.0	0:01.76	VBoxCli+
3015	xtradvs	20	0	14408	5504	3328	R	0.7	0.1	0:00.06	top
323	systemd+	20	0	17076	7296	6528	S	0.3	0.1	0:01.17	systemd+
594	root	20	0	1394280	32232	20352	S	0.3	0.4	0:09.80	snappd
2732	xtradvs	20	0	632028	54100	43168	S	0.3	0.7	0:00.98	gnome-t+
1	root	20	0	169432	12900	8932	S	0.0	0.2	0:04.09	systemd
2	root	20	0	0	0	0	S	0.0	0.0	0:00.02	kthreadd
3	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	rcu_gp
4	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	rcu_par+
5	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	slub_fl+
6	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	netns
8	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kworker+
9	root	20	0	0	0	0	I	0.0	0.0	0:00.16	kworker+
10	root	20	0	0	0	0	I	0.0	0.0	0:00.52	kworker+
11	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	mm_perc+
12	root	20	0	0	0	0	I	0.0	0.0	0:00.00	rcu_tas+

While in the **top** command, display the help screen. Upload the screenshot for this step after executing the command.

```

Help for Interactive Commands - procs-ng 4.0.3
Window 1:Def: Cumulative mode Off. System: Delay 3.0 secs; Secure mode Off.

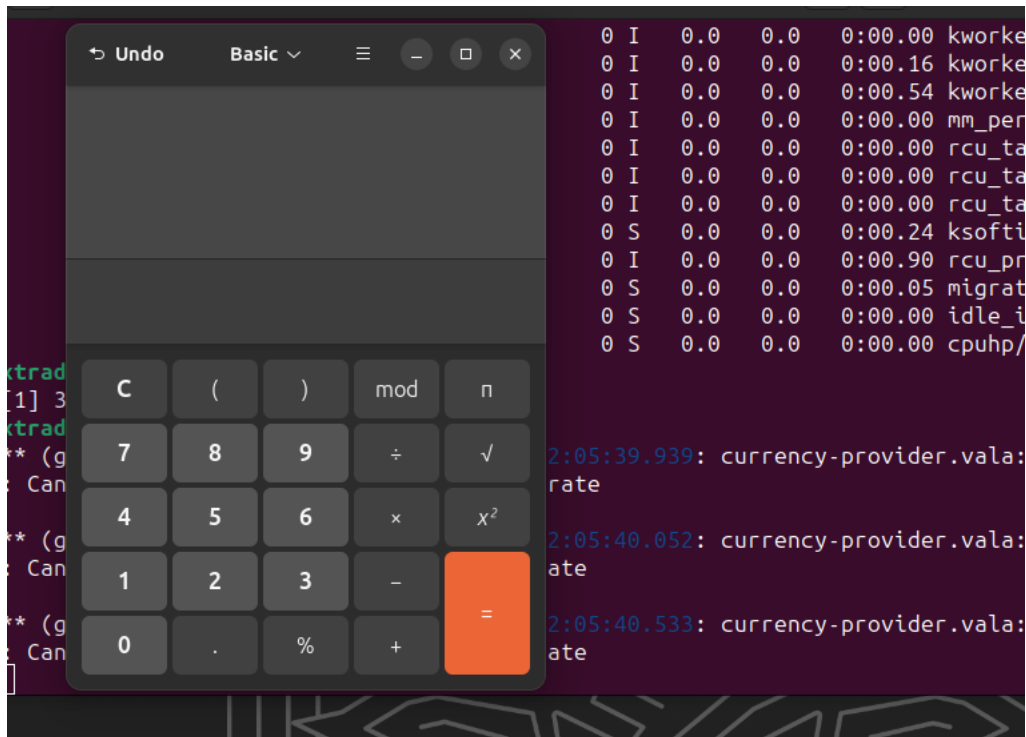
Z,B,E,e Global: 'Z' colors; 'B' bold; 'E'/'e' summary/task memory scale
l,t,m,I,0 Toggle: 'l' load avg; 't' task/cpu; 'm' memory; 'I' Irix; '0' zeros
1,2,3,4,5 Toggle: '1/2/3' cpu/numa views; '4' cpus abreast; '5' P/E-cores
f,X Fields: 'f' add/remove/order/sort; 'X' increase fixed-width fields

L,&,<,> . Locate: 'L'/'&' find/again; Move sort column: '<'/'>' left/right
R,H,J,C . Toggle: 'R' Sort; 'H' Threads; 'J' Num justify; 'C' Coordinates
c,i,S,j . Toggle: 'c' Cmd name/line; 'i' Idle; 'S' Time; 'j' Str justify
x,y . Toggle highlights: 'x' sort field; 'y' running tasks
z,b . Toggle: 'z' color/mono; 'b' bold/reverse (only if 'x' or 'y')
u,U,o,0 . Filter by: 'u'/'U' effective/any user; 'o'/'O' other criteria
n,#,^0 . Set: 'n'/'#' max tasks displayed; Show: Ctrl+'0' other filter(s)
V,v,F . Toggle: 'V' forest view; 'v' hide/show children; 'F' keep focused

d,k,r,^R 'd' set delay; 'k' kill; 'r' renice; Ctrl+'R' renice autogroup
^G,K,N,U View: ctl groups ^G; cmdline ^K; environment ^N; supp groups ^U
Y,! ,^E,P Inspect 'Y'; Combine Cpus '!'; Scale time ^E; View namespaces ^P
W,q Write config file 'W'; Quit 'q'
(commands shown with '.' require a visible task display window )
Press 'h' or '?' for help with Windows,
Type 'q' or <Esc> to continue

```

Quit the **top** command and execute the **gnome-calculator** program in the background. Upload the screenshot for this step after executing the command.



Use the **pgrep** command to find the Process ID (PID) of a specific process (e.g., sshd). Upload the screenshot for this step after executing the command.

```
pgrep -f: command not found
xtradv@xguil001:~$ pgrep -f gnome-calculator
3023
xtradv@xguil001:~$
```

-
- Use the **killall** command to stop (kill) all instances of the gnome-calculator program. Upload the screenshot for this step after executing the command.

```
3023
xtradv@xguil001:~$ killall gnome-calculator
xtradv@xguil001:~$ pgrep gnome-calculator
pgrep: pattern that searches for process name longer than 15 characters will result in zero matches
Try 'pgrep -f' option to match against the complete command line.
[1]+  Terminated                  gnome-calculator
xtradv@xguil001:~$ pgrep -f gnome-calculator
xtradv@xguil001:~$
```

Task 2:

Package Installation

- Download the installation package (.deb file) for **Google Chrome** in Linux and install it properly. Please note: You should **NOT use apt or apt-get to install** Google Chrome in this step. Upload the screenshot for this step after executing the command.

```
xtradv@xguil001:~$
xtradv@xguil001:~$ sudo dpkg -i google-chrome-stable_current_amd64.deb
[sudo] password for xtradv:
Selecting previously unselected package google-chrome-stable.
(Reading database ... 179371 files and directories currently installed.)
Preparing to unpack google-chrome-stable_current_amd64.deb ...
Unpacking google-chrome-stable (146.0.7680.177-1) ...
Setting up google-chrome-stable (146.0.7680.177-1) ...
update-alternatives: using /usr/bin/google-chrome-stable to provide /usr/bin/x-www-browser (x-www-browser) in auto mode
update-alternatives: using /usr/bin/google-chrome-stable to provide /usr/bin/gnome-www-browser (gnome-www-browser) in auto mode
update-alternatives: using /usr/bin/google-chrome-stable to provide /usr/bin/google-chrome (google-chrome) in auto mode
Processing triggers for mailcap (3.70+nmu1ubuntu1) ...
Processing triggers for gnome-menus (3.36.0-1ubuntu1) ...
Processing triggers for desktop-file-utils (0.26-1ubuntu5) ...
Processing triggers for man-db (2.11.2-3) ...
xtradv@xguil001:~$
```

- Create a backup file for the **sources.list** named **source.list.bk** in your Linux system. Display the contents in both files, and make sure they are identical. Upload the screenshot for this step after executing the command.

```

deb http://us.archive.ubuntu.com/ubuntu/ mantic multiverse
# deb-src http://us.archive.ubuntu.com/ubuntu/ mantic multiverse
deb http://us.archive.ubuntu.com/ubuntu/ mantic-updates multiverse
# deb-src http://us.archive.ubuntu.com/ubuntu/ mantic-updates multiverse

## N.B. software from this repository may not have been tested as
## extensively as that contained in the main release, although it includes
## newer versions of some applications which may provide useful features.
## Also, please note that software in backports WILL NOT receive any review
## or updates from the Ubuntu security team.
deb http://us.archive.ubuntu.com/ubuntu/ mantic-backports main restricted universe multiverse
# deb-src http://us.archive.ubuntu.com/ubuntu/ mantic-backports main restricted universe multiverse

deb http://security.ubuntu.com/ubuntu/ mantic-security main restricted
# deb-src http://security.ubuntu.com/ubuntu/ mantic-security main restricted
deb http://security.ubuntu.com/ubuntu/ mantic-security universe
# deb-src http://security.ubuntu.com/ubuntu/ mantic-security universe
deb http://security.ubuntu.com/ubuntu/ mantic-security multiverse
# deb-src http://security.ubuntu.com/ubuntu/ mantic-security multiverse
xtradv@xguil001:~$ cat /etc/apt/source.list.bk
# See http://help.ubuntu.com/community/UpgradeNotes for how to upgrade to
# newer versions of the distribution.
deb http://us.archive.ubuntu.com/ubuntu/ mantic main restricted
# deb-src http://us.archive.ubuntu.com/ubuntu/ mantic main restricted

## Major bug fix updates produced after the final release of the
## distribution.
deb http://us.archive.ubuntu.com/ubuntu/ mantic-updates main restricted
# deb-src http://us.archive.ubuntu.com/ubuntu/ mantic-updates main restricted

## N.B. software from this repository is ENTIRELY UNSUPPORTED by the Ubuntu
## team. Also, please note that software in universe WILL NOT receive any
## review or updates from the Ubuntu security team.
deb http://us.archive.ubuntu.com/ubuntu/ mantic universe
# deb-src http://us.archive.ubuntu.com/ubuntu/ mantic universe
deb http://us.archive.ubuntu.com/ubuntu/ mantic-updates universe
# deb-src http://us.archive.ubuntu.com/ubuntu/ mantic-updates universe

## N.B. software from this repository is ENTIRELY UNSUPPORTED by the Ubuntu
## team, and may not be under a free licence. Please satisfy yourself as to
## your rights to use the software. Also, please note that software in
## multiverse WILL NOT receive any review or updates from the Ubuntu
## security team.
deb http://us.archive.ubuntu.com/ubuntu/ mantic multiverse
# deb-src http://us.archive.ubuntu.com/ubuntu/ mantic multiverse
deb http://us.archive.ubuntu.com/ubuntu/ mantic-updates multiverse
# deb-src http://us.archive.ubuntu.com/ubuntu/ mantic-updates multiverse

## N.B. software from this repository may not have been tested as
## extensively as that contained in the main release, although it includes
## newer versions of some applications which may provide useful features.
## Also, please note that software in backports WILL NOT receive any review
## or updates from the Ubuntu security team.
deb http://us.archive.ubuntu.com/ubuntu/ mantic-backports main restricted universe multiverse
# deb-src http://us.archive.ubuntu.com/ubuntu/ mantic-backports main restricted universe multiverse

deb http://security.ubuntu.com/ubuntu/ mantic-security main restricted
# deb-src http://security.ubuntu.com/ubuntu/ mantic-security main restricted
deb http://security.ubuntu.com/ubuntu/ mantic-security universe
# deb-src http://security.ubuntu.com/ubuntu/ mantic-security universe
deb http://security.ubuntu.com/ubuntu/ mantic-security multiverse
# deb-src http://security.ubuntu.com/ubuntu/ mantic-security multiverse
xtradv@xguil001:~$

```

Delete everything in the source.list file. Now try to download the package “joe” by using **apt get install** command. What error do you see? Upload the screenshot for this step after executing the command.

```
# deb-src http://security.ubuntu.com/ubuntu/ Mantic-security Multiverse
xtradv@xguil001:~$ sudo truncate -s 0 /etc/apt/sources.list
xtradv@xguil001:~$ cat /etc/apt/sources.list
xtradv@xguil001:~$ sudo apt-get install joe
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
E: Unable to locate package joe
xtradv@xguil001:~$
```

- **Recover** the sources.list from the backup file, then try to download the “joe” file again. You should be able to install joe this time. Upload the screenshot for this step after executing the command.

```
xtradv@xguil001:~$ sudo cp /etc/apt/source.list.bk /etc/apt/sources.list
xtradv@xguil001:~$ sudo apt update
Get:1 https://dl.google.com/linux/chrome/deb stable InRelease [1,825 B]
Ign:2 http://us.archive.ubuntu.com/ubuntu mantic InRelease
Ign:3 http://us.archive.ubuntu.com/ubuntu mantic-updates InRelease
Ign:4 http://us.archive.ubuntu.com/ubuntu mantic-backports InRelease
Ign:5 http://security.ubuntu.com/ubuntu mantic-security InRelease
Err:6 http://us.archive.ubuntu.com/ubuntu mantic Release
  404 Not Found [IP: 91.189.91.81 80]
Err:7 http://us.archive.ubuntu.com/ubuntu mantic-updates Release
  404 Not Found [IP: 91.189.91.81 80]
Err:8 http://us.archive.ubuntu.com/ubuntu mantic-backports Release
  404 Not Found [IP: 91.189.91.81 80]
Err:9 http://security.ubuntu.com/ubuntu mantic-security Release
  404 Not Found [IP: 91.189.92.23 80]
Get:10 https://dl.google.com/linux/chrome/deb stable/main amd64 Packages [1,214 B]
Reading package lists... Done
E: The repository 'http://us.archive.ubuntu.com/ubuntu mantic Release' no longer has a Release file.
N: Updating from such a repository can't be done securely, and is therefore disabled by default.
N: See apt-secure(8) manpage for repository creation and user configuration details.
E: The repository 'http://us.archive.ubuntu.com/ubuntu mantic-updates Release' no longer has a Release file.
N: Updating from such a repository can't be done securely, and is therefore disabled by default.
N: See apt-secure(8) manpage for repository creation and user configuration details.
E: The repository 'http://us.archive.ubuntu.com/ubuntu mantic-backports Release' no longer has a Release file.
N: Updating from such a repository can't be done securely, and is therefore disabled by default.
N: See apt-secure(8) manpage for repository creation and user configuration details.
E: The repository 'http://security.ubuntu.com/ubuntu mantic-security Release' no longer has a Release file.
N: Updating from such a repository can't be done securely, and is therefore disabled by default.
N: See apt-secure(8) manpage for repository creation and user configuration details.
xtradv@xguil001:~$ sudo apt-get install joe
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  joe
0 upgraded, 1 newly installed, 0 to remove and 86 not upgraded.
Need to get 541 kB of archives.
After this operation, 2,135 kB of additional disk space will be used.
Err:1 http://us.archive.ubuntu.com/ubuntu mantic/universe amd64 joe amd64 4.6-1.1
  404 Not Found [IP: 91.189.91.82 80]
E: Failed to fetch http://us.archive.ubuntu.com/ubuntu/pool/universe/j/joe/joe_4.6-1.1_amd64.deb 404 Not Found [IP: 91.189.91.82 80]
E: Unable to fetch some archives, maybe run apt-get update or try with --fix-missing?
xtradv@xguil001:~$
```

- Install and play the **cowsay** command. Upload the screenshot for this step after executing the command.

```
xtradvs@xguil001:~$ sudo apt install cowsay
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Suggested packages:
  filters cowsay-off
The following NEW packages will be installed:
  cowsay
0 upgraded, 1 newly installed, 0 to remove and 86 not upgraded.
Need to get 18.6 kB of archives.
After this operation, 93.2 kB of additional disk space will be used.
Get:1 http://us.archive.ubuntu.com/ubuntu mantic/universe amd64 cowsay all 3.03+dfsg2-8 [18.6 kB]
Fetched 18.6 kB in 0s (53.8 kB/s)
Selecting previously unselected package cowsay.
(Reading database ... 179652 files and directories currently installed.)
Preparing to unpack .../cowsay_3.03+dfsg2-8_all.deb ...
Unpacking cowsay (3.03+dfsg2-8) ...
Setting up cowsay (3.03+dfsg2-8) ...
Processing triggers for man-db (2.11.2-3) ...
xtradvs@xguil001:~$ cowsay Hello World

  < Hello World >
  -----
      \   ^__^
       (oo)\_______
          (__)\       )\/\
              ||----w |
              ||     ||

xtradvs@xguil001:~$
```

Grading Criteria

Task 1: Linux Commands for Basic Network Configuration [10 subtasks x 6 = 60 Points]

Task 2: Package Installation [5 subtasks x 8 = 40 Points]